
Product description

The Meridian 1 product line consists of system types referred to as system options. A system option is made up of Universal Equipment Modules (UEMs) stacked one on top of another to form a column. Each column contains a pedestal, a top cap, and up to four modules. A system can have one column or multiple columns.

Each UEM is a self-contained unit that, when equipped, houses a cardcage and backplane, power and ground cabling, power units, I/O panels, circuit cards, and cables. When the cardcage is installed, the function of the UEM is established and the module is no longer “universal.” Meridian 1 modules are as follows:

- NT5K11 Enhanced Existing Peripheral Equipment Module options 21, 51, 51C, 61, 61C, 71, 81, and 81C
- NT5D21 Core/Network Module for options 51C, 61C, and 81C
- NT6D39 CPU/Network Module
required for options 51 and 61
- NT6D60 Core Module
required for option 81
- NT8D11 Common/Peripheral Equipment (CE/PE) Module
required for options 21A, 21, and 21E
- NT8D13 Peripheral Equipment (PE) Module
optional for options 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C
- NT8D34 CPU Module
required for option 71

- NT8D35 Network Module
required for options 71, 81, and 81C, optional for options 21, 21E, 51, 51C, 61, and 61C
- NT8D36 InterGroup Module
required for options 71, 81, and 81C
- NT8D37 Intelligent Peripheral Equipment (IPE) Module
required for options 51, 51C, 61, 61C, 71, 81, and 81C, optional for options 21 and 21E
- NT8D47 Remote Peripheral Equipment (RPE) Module
optional for options 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C
- NT9D11 Core/Network Module
for option 61C

Note: In addition, modules that house equipment for specific applications, such as Meridian Mail and Meridian Link, can be included in a column.

The pedestal generally houses a blower unit, air filter, Power Distribution Unit (PDU), and System Monitor.

The top cap provides airflow exits, input/output (I/O) cable entry and exit, and overhead cable-rack mounting. Thermal sensor assemblies for the column are attached to a perforated panel on top of the highest module in the column, under the top cap.

A system can have one column or multiple columns. To comply with FCC and CSA standards for containing electromagnetic interference and radio frequency interference (EMI/RFI), spacer kits connect the columns in a multiple-column system.

Meridian 1 system options

This document includes information on the following Meridian 1 system types (see [Figures 1](#) and [2](#)):

- option 21A: single CPU, single module
- options 21, 21E: single CPU
- option 51: single CPU, half-network group
- option 51C: enhanced common control complex, single CPU, and half-network group
- option 61: dual CPU, full-network group
- option 61C: enhanced common control complex, dual CPU, and one full-network group
- option 71: dual CPU, multiple-network groups
- option 81: enhanced common control complex, dual CPU, and multiple-network groups
- option 81C: enhanced common control complex, dual CPU, and multiple-network groups

All system options are available in AC- and DC-powered versions (except option 21A, which is available with AC power only).

Figure 1
Options 21A, 21/21E, 51, 51C, 61, and 61C

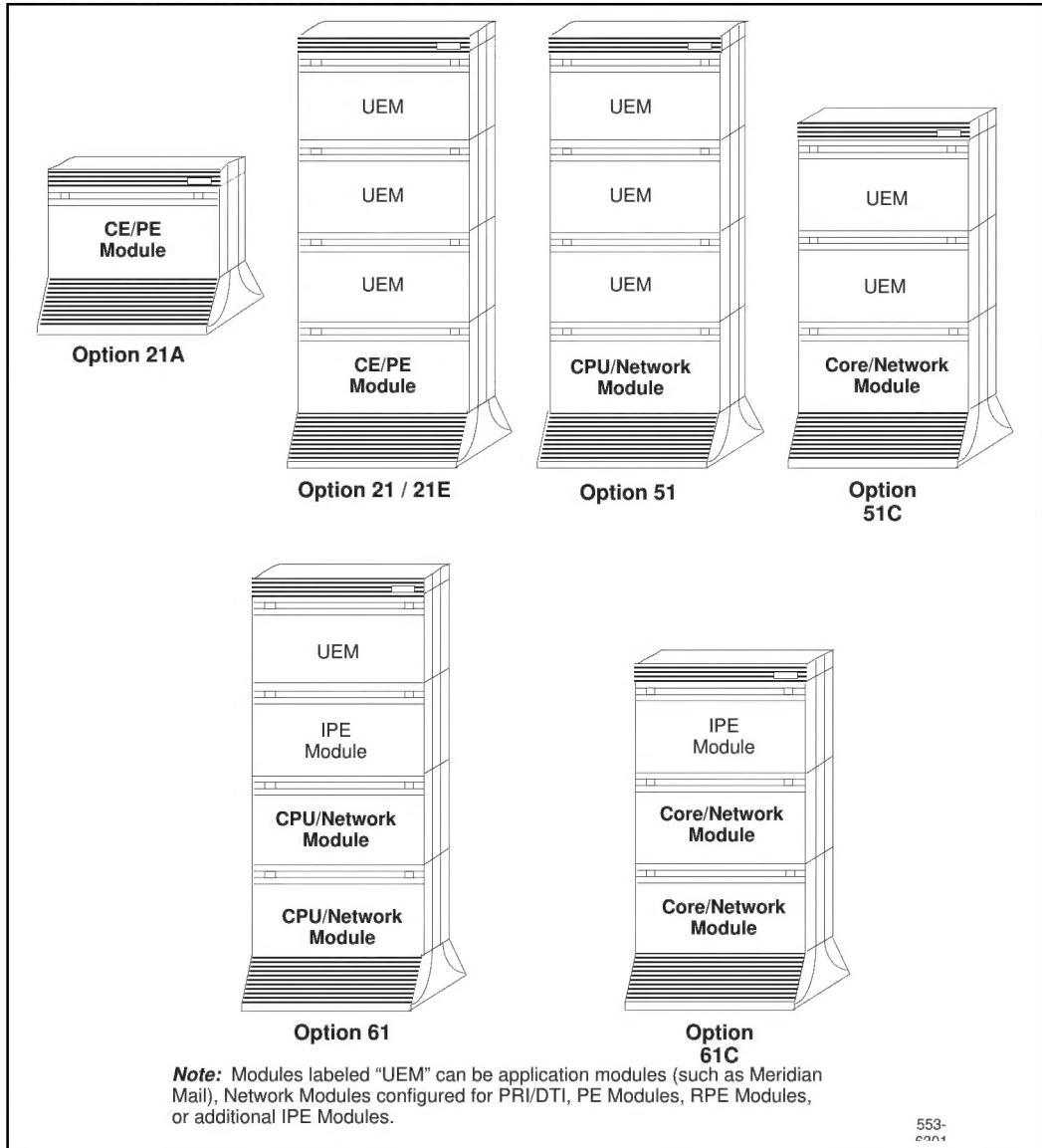


Figure 2
Options 71 and 81

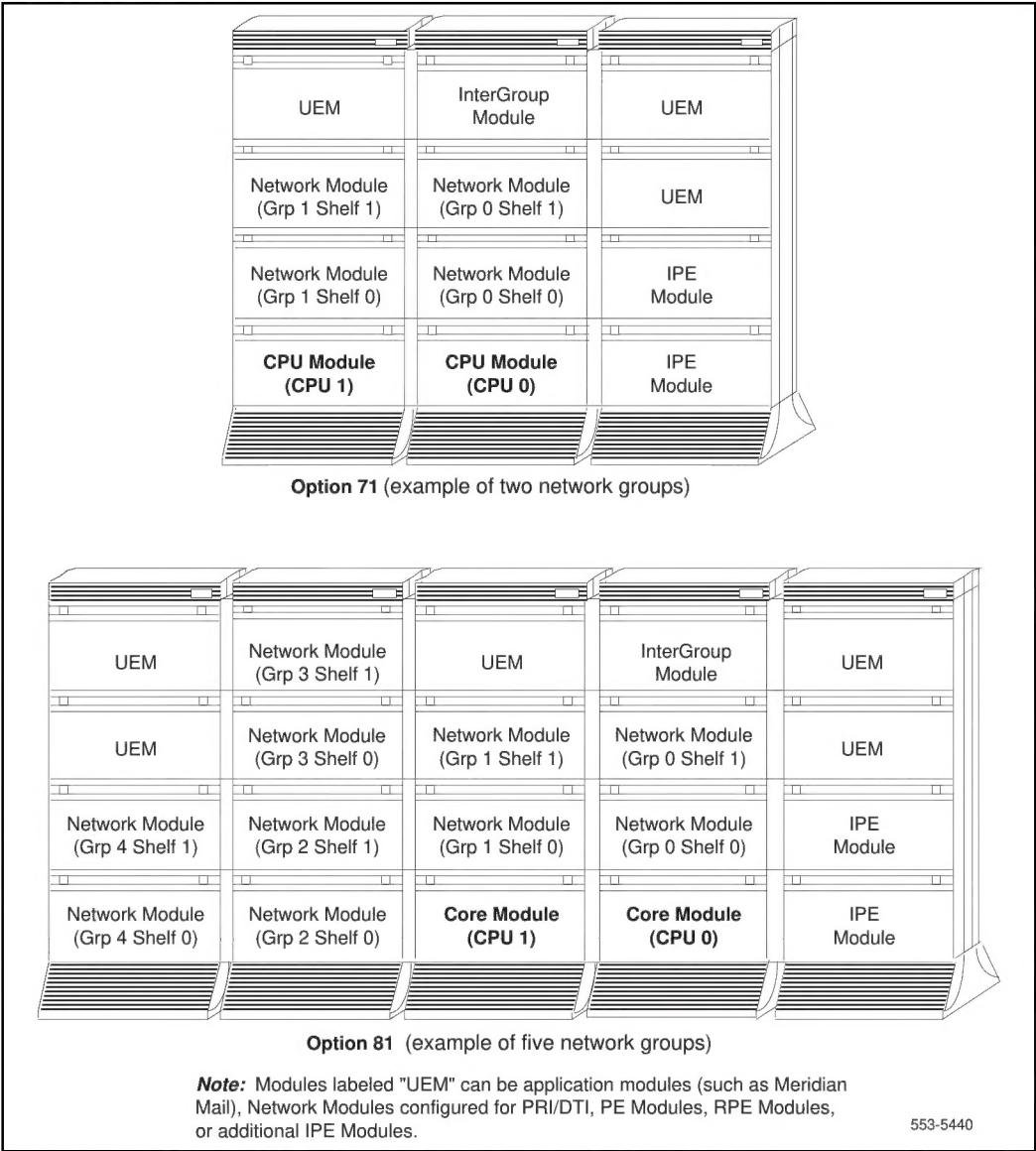
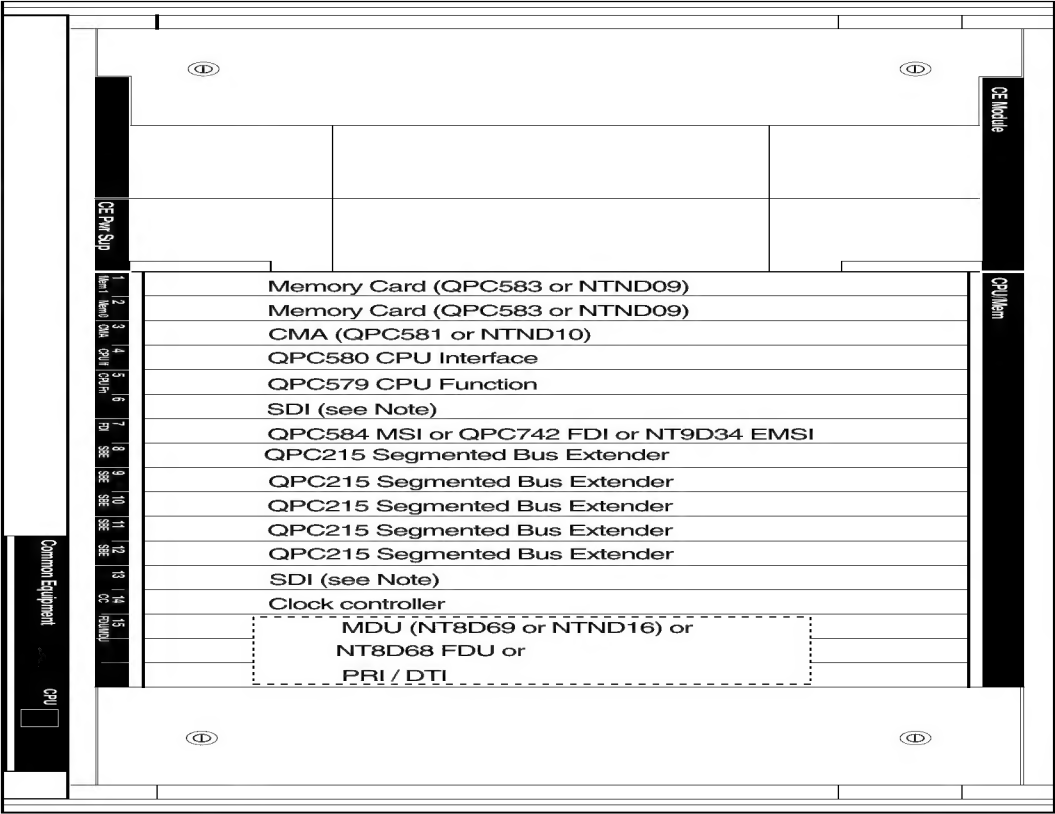


Figure 3
Options 51C, 61C, and 81C



Note: QPC580 or QPC581 for parallel read only.

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System option 21A

Option 21A is a single-CPU system housed in a single CE/PE Module. This system has specialized power distribution, monitoring, and cooling systems that are optimized for the single-module operation.

[Table 1](#) lists the specifications for option 21A. [Figure 1](#) shows the basic configuration for option 21A.

Table 1
Option 21A specifications

System characteristics:	
Maximum number of ports	— 160
Input voltage	— 208 V ac
Number of CPUs	— 1
Number of network loops	— 28 loops (4 loops per slot)
Memory	— 768 Kword (1.5 MB), 16-bit memory card
Software generic	— 1011 (releases 15–17)
Base hardware:	
CE/PE Module (only)	— CE/PE power supply (AC only) — NT7D15 System Monitor (backplane paddle board) — CPU card — ROM card — Memory/Peripheral Signaling card — Floppy Disk Unit (FDU) — Floppy Disk Interface (FDI) card — Network/Digitone Receiver (DTR) card — Conference/Tone and Digit Switch (TDS) card — IPE cards
Pedestal	— A0321130 Fan Unit (two)
Top cap	— NT8D53AD PDU

System options 21 and 21E

Options 21 and 21E are single-CPU systems. One CE/PE Module is required. In addition, IPE Modules, PE Modules, RPE Modules, and application modules can be used.

Option 21 is:

- equipped with the following CPU equipment:
 - QPC687 CPU Card
 - QPC940 ROM Card
 - NT8D19 Memory/Peripheral Signaling Card
- compatible with X11 releases 15–17

Option 21E is:

- equipped with the following CPU equipment:
 - NTND01 Integrated CPU/Memory (ICM) Card (6MB or 12MB)
 - NTND31 ROM Card
 - NTND02 Misc/Serial Data Interface (SDI)/Peripheral Signaling (MSPS) Card
- compatible with X11 release 18 and later

Note: Option 21E provides up to 60 minutes of battery backup for the CPU memory during power failures.

[Table 2](#) lists the specifications for options 21 and 21E. [Figure 1](#) shows the basic configuration for these system options (there can be more than one column).

Table 2
Options 21 and 21E specifications

System characteristics:	
Maximum number of ports	— Option 21: 800 — Option 21E: 1200
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 1
Number of network loops	— 28 loops (4 loops per slot)
Memory	— Option 21: 768 Kword (1.5 MB), 16-bit memory card — Option 21E: 2 Mword (6.0 MB) memory card
Software generic	— Option 21: 1011 (releases 15–17) — Option 21E: 1511 (release 18-21)
Base hardware:	
CE/PE Module (one)	— CE/PE power supply — CPU or ICM card — ROM card — Memory/PS or MSPS card — FDU or SMDU (for X11 release 20 or higher) — FDI or EMSI (for X11 release 20 or higher) — Network/DTR card — Conference/TDS card — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness

System option 51

Option 51 is a single-CPU system with parity-protected memory and a half-network group. One CPU/Network Module and one IPE Module are required. Additional IPE Modules, PE Modules, RPE Modules, and application modules can be used.

Table 3 lists the specifications for option 51. Figure 1 shows the basic configuration (there can be more than one column).

Table 3
Option 51 specifications (Part 1 of 2)

System characteristics:		
Maximum number of ports	—	1000
Input voltage	—	208 V ac or –48 V dc
Number of CPUs	—	1
Number of network loops	—	16
Memory options:		
X11 releases 15–17	—	768 Kword (2.3 MB) memory card
X11 release 18 or later	—	2 Mword (6 MB) memory card
	—	4 Mword (12 MB) memory card
Software generic	—	1111 (release 15-21)

Table 3
Option 51 specifications (Part 2 of 2)

Base hardware:	
CPU/Network Module (one)	— CE power supply — CPU Interface card and CPU Function card — ROM card — Memory card — Changeover and Memory Arbitrator (CMA) card — 3-Port Extender (3PE) card — FDU or Multi Disk Unit (MDU)* — FDI, MSI, or EMSI interface card — Bus Terminating Units (BTUs) — Superloop Network card — Conference/TDS card — SDI-type card — PE power supply
IPE Module	— IPE cards
Pedestal (one per column)	— PDU — Blower unit — System Monitor
Top cap (one per column)	— Thermostat harness — Air probe harness
* With releases 15–17 the MDU and MSI or EMSI are optional. With release 18, the MDU and MSI or EMSI are required.	

System option 51C

Option 51C is a single-CPU system with a half-network group. One Core/Network Module and one IPE Module are required. Additional IPE Modules, PE Modules, RPE Modules, and application modules can be used.

Table 5 lists the specifications for option 51C. Figure 1 shows the basic configuration.

Table 4
Option 51C specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 1000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 1
Number of network loops	— 16
Memory options:	
X11 releases 19–21	— 24 or 48 MB NT6D66 CP card or the NT9D19 CP card
X11 release 22	— 48 MB NT6D66 CP card or any NT9D19 CP card
X11 release 23	— NT9D19 CP card or NT5D10 CP card
Software generic	— 1711 (release 20-21). Use only the NT6D66 CP card to run release 22 on this generic.
	— 2211 if using the NT9D19 CP card or NT5D10 CP card (release 22 or later)

Table 4
Option 51C specifications (Part 2 of 2)

Base hardware:	
Core/Network Module	Required per system: — SDI-type card Required in module: — CE power supply (CEPS) — Call Processor (CP) — Input-Output Disk Unit with CD-ROM (IODU/C) — Core to Network Interface (CNI) — 3-Port Extender (3PE) card — Clock Controller Card (MCLK)
IPE Module	— PE power supply — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness

System option 61

Option 61 is a dual-CPU system with standby processing capability, fully redundant memory, and a full-network group. Two CPU/Network Modules and one IPE Module are required. Additional IPE Modules, PE Modules, RPE Modules, and application modules can be used.

Table 5 lists the specifications for option 61. Figure 1 shows the basic configuration.

Table 5
Option 61 specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 2000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 2 (redundant)
Number of network loops	— 32
Memory options:	
X11 releases 15–17	— 2.3 MB (768 Kword) memory card
X11 release 18 to 21	— 6 MB (2 Mword) memory card
	— 12 MB (4 Mword) memory card
Software generic	— 1111 (release 15-21)

Table 5
Option 61 specifications (Part 2 of 2)

Base hardware:	
CPU/Network Module (two) (one sits on top of the other)	Required per system: — FDU or MDU* — Superloop Network card — Conference/TDS card — SDI-type card Required per module: — CE power supply — CPU Interface card and CPU Function card — ROM card — Memory card — CMA card — 3PE card — FDI, MSI, or EMSI card — BTUs
IPE Module	— PE power supply — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness
* With releases 15–17 the MDU and MSI or EMSI are optional. With release 18, the MDU and MSI or EMSI are required.	

System option 61C

Option 61C is a dual-CPU system with standby processing capability, fully redundant memory, and a full-network group. Two Core/Network Modules and one IPE Module are required. Additional IPE Modules, PE Modules, RPE Modules, and application modules can be used.

Note: Option 61C may be configured using the NT9D11 or the NT5D21 Core/Network Modules. When configured using the NT5D21 Core/Network Modules, it is considered option 81C ready.

Table 5 lists the specifications for option 61C. Figure 1 shows the basic configuration.

Table 6
Option 61C specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 2000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 2 (redundant)
Number of network loops	— 32
Memory options:	
X11 releases 19–21	— 24 or 48 MB NT6D66 CP card or the NT9D19 CP card
X11 release 22	— 48 MB NT6D66 CP card or any NT9D19 CP card
X11 release 23	— NT9D19 CP card or NT5D10 CP card
Software generic	— 1811 (release 19-21). Use only the NT6D66 CP card to run release 22 on this generic
	— 2311 if using the NT9D19 CP or NT5D10 CP card (release 22 or later)

Table 6
Option 61C specifications (Part 2 of 2)

Base hardware:	
Core/Network Module (two)	Required per system: — SDI-type card Required per module: — CE power supply (CEPS) — Call Processor (CP) — Input/Output Processor (IOP) — Core to Network Interface (CNI) card — 3-Port Extender (3PE) card — Clock Controller card (MCLK) — Hybrid Bus Terminators - with NT5D21 Core/Network Modules only — Peripheral Signaling card (PS) — Core Multi Drive Unit (CMDU) — Core Bus Terminator (CBTs)- with NT9D11 Core/Network Modules only
IPE Module	— PE power supply — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness

System option 71

Option 71 is a dual-CPU system with standby processing capabilities, fully redundant memory, and up to five full-network groups. The following modules are required:

- two CPU Modules
- one InterGroup Module
- a minimum of two Network Modules (provides one network group)
- a minimum of one IPE Module

Additional Network and IPE Modules are required for additional network groups. PE Modules, RPE Modules, and application modules can also be used.

Table 7 lists the specifications for option 71. Figure 2 shows a typical configuration for two network groups. Additional columns can be added, and there can be more than one row of columns.

Table 7
Option 71 specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 10,000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 2 (redundant)
Number of network loops	— 160
Memory options:	
X11 releases 15–17	— 2.3 MB: one 2.3 MB (768 Kword) memory card
	— 4.6 MB: two 2.3 MB (768 Kword) memory cards
X11 release 18 to 21	— 6 MB: one 6 MB (2 Mword) memory card
	— 12 MB: two 6 MB (2 Mword) memory cards or one 12 MB (4 Mword) memory card
Software generic	— 1211 (release 15-21)

Table 7
Option 71 specifications (Part 2 of 2)

Base hardware:	
CPU Modules (two—must be side-by-side)	Required per system: — MDU (or FDU with release 15) Required per module: — CE power supply — CPU Interface card and CPU Function card — ROM card — Memory card — CMA card — Segmented Bus Extender (SBE) card — Clock Controller card — FDI, MSI, or EMSI card — BTUs
InterGroup Module	— Junctor board
Network Module	— Superloop Network card — Conference/TDS card — 3PE card — Dual InterGroup Switch (DIGS) card — SDI-type card
IPE Module	— PE power supply — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness

System option 81

Option 81 is a dual-CPU system with standby processing capabilities, fully redundant memory, and up to five full-network groups. Option 81 is equipped with two redundant disk drive units.

The following modules are required:

- two Core Modules
- one InterGroup Module
- a minimum of two Network Modules
- a minimum of one IPE Module

Additional Network and IPE Modules are required for additional network groups. PE Modules, RPE Modules, and application modules can also be used.

Table 8 lists the specifications for option 81. Figure 2 shows a typical configuration for five full network groups. Additional columns can be added, and there can be more than one row of columns.

Table 8
Option 81 specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 10,000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 2 (redundant)
Number of network loops	— 160
Memory	— 48 MB (X11 Release 20–21)
	— 64 MB (X11 Release 22 or later)
Software generic	— 1611 (release 18 or later)

Table 8
Option 81 specifications (Part 2 of 2)

Base hardware:	
Core Module (two)	— CE power supply — Core Multi Drive Unit (CMDU) — Call Processor (CP) card — I/O Processor (IOP) card — Core to Network Interface (CNI) card — Core Bus Terminator (CBT) card — 3PE card — Clock Controller card — BTUs
InterGroup Module	— Junctor board
Network Module	— Superloop Network card — Conference/TDS card — 3PE card — Dual InterGroup Switch (DIGS) card — SDI-type card
IPE Module	— PE power supply — IPE cards
Pedestal (one per column)	— System Monitor — PDU — Blower unit
Top cap (one per column)	— Thermostat harness — Air probe harness

System option 81C

Option 81C is a dual-CPU system with standby processing capabilities, fully redundant memory, and up to five full-network groups. Option 81C is equipped with two redundant input/output processor and disk drive unit combination packs.

The following modules are required:

- two Core/Network Modules (provide one network group)
- one InterGroup Module
- a minimum of two Network Modules (provides one network group)
- a minimum of one IPE Module

Additional Network and IPE Modules are required for additional network groups. PE Modules, RPE Modules, and application modules can also be used.

Table 8 lists the specifications for option 81C. Figure 2 shows a typical configuration for five full network groups. Additional columns can be added, and there can be more than one row of columns.

Table 9
Option 81C specifications (Part 1 of 2)

System characteristics:	
Maximum number of ports	— 10,000
Input voltage	— 208 V ac or –48 V dc
Number of CPUs	— 2 (redundant)
Number of network loops	— 160
Memory	— 48 MB min (with X11 Release 21)
	— 64 MB min (with X11 Release 22 or later)
Software generic	— 1911 (release 21 or later)

Table 9
Option 81C specifications (Part 2 of 2)

Base hardware:	
Core/Network Module (two) (side-by-side or stacked on top of each other)	— CE power supply
	— Input Output Disk Unit with CD-ROM (IODU/C)
	— Call Processor (CP) card
	— Core to Network Interface (CNI) cards
	— Hybrid Bus Terminators
	— Dual InterGroup Switch card (DIGS)
	— Network cards
	— Conference/TDS card
	— Superloop Network cards
	— Peripheral Signaling card (PS)
	— 3-Port Extender card (3PE)
InterGroup Module	— Junctor board
Network Module	— Superloop Network card
	— Clock Controller card
	— SDI-type card
IPE Module	— PE power supply
	— IPE cards
Pedestal (one per column)	— System monitor
	— Power Distribution Unit (PDU)
	— Blower unit
Top cap (one per column)	— Thermostat harness
	— Air probe harness

System modules

Each type of module is available in AC-power and DC-power versions (except the NT8D36 InterGroup Module that does not require power, and the NT5K11 EEPE module which is only available in DC-power). AC-power modules generally require a module power distribution unit (MPDU) to provide circuit breakers for the power supplies. DC-power modules do not require an MPDU because a switch on each power supply performs the same function as the MPDU circuit breakers.

Note 1: In the UK, DC powered modules must be used.

Note 2: Existing Peripheral Equipment (EPE) modules are not approved for use in the UK.

The figures in this chapter show a typical configuration for each module. (DC power is represented in these examples.)

NT5K11 Enhanced Existing Peripheral Equipment

The NT5K11 Enhanced Existing Peripheral Equipment (EEPE) module supports the PE cards currently used in Meridian SL-1 PE shelves. It provides the interface to the system for trunks and stations. The NT5K11 module may be connected to an ENET (QPC414) circuit card and may be used in system options 21, 51, 51C, 61, 61C, 71, 81, and 81C, and in the Meridian SL-1XT, NT, ST, N, and XN systems.

The NT5K11 EEPE module houses two Dual Loop Peripheral Buffer circuit cards (NT5K10) and two Quad DIGITONE receiver cards (NT5K09) at the rear of the module (see [Figure 4](#)). It supports up to sixteen existing peripheral equipment circuit cards as shown in Figure 4.

The NT5K11 EEPE module is available only with an NT5K12 (EPEPS) DC power supply. This power supply provides the voltages to operate the circuit cards located in the module and includes a ringing generator.

All cable connections to the MDF are made in the rear of the module through I/O panels (see [Figure 4](#)). Twelve PE cables are required to the MDF for all 16 card slots.

When the Meridian Data Service ADM, SADM, ASIM, AIM are required on system options 21, 51, 51C, 61, 61C, 71, 81, and 81C, the NT5K11 EEPE module must be used.

Figure 4
EEPE rear card slot assignment

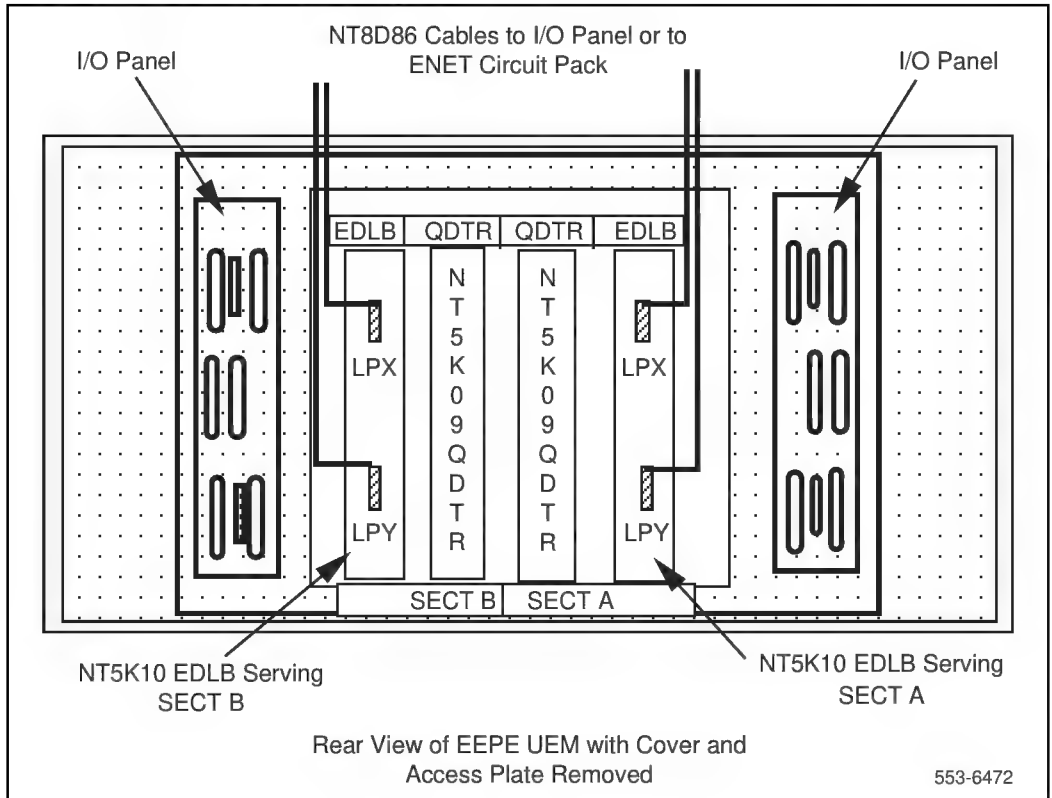
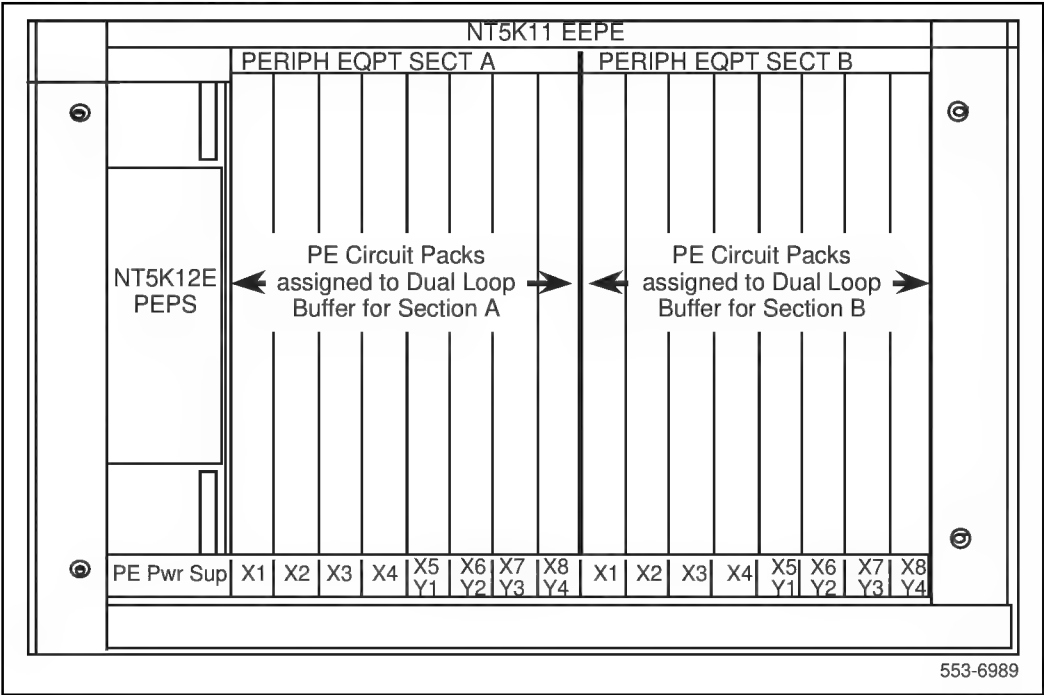


Figure 5
EEPE front card slot assignment



NT5D21 Core/Network Module

This module provides common control and network interface functions in options 51C, 61C, and 81C starting with X11 release 21.

Two Core/Network Modules are required in the option 61C and 81C switch and one module is required in the option 51C. The two modules in options 61C and 81C provide redundant common control operation. If there is a failure in one of the modules, the function is transferred to the appropriate circuit cards in the other module without a loss of service.

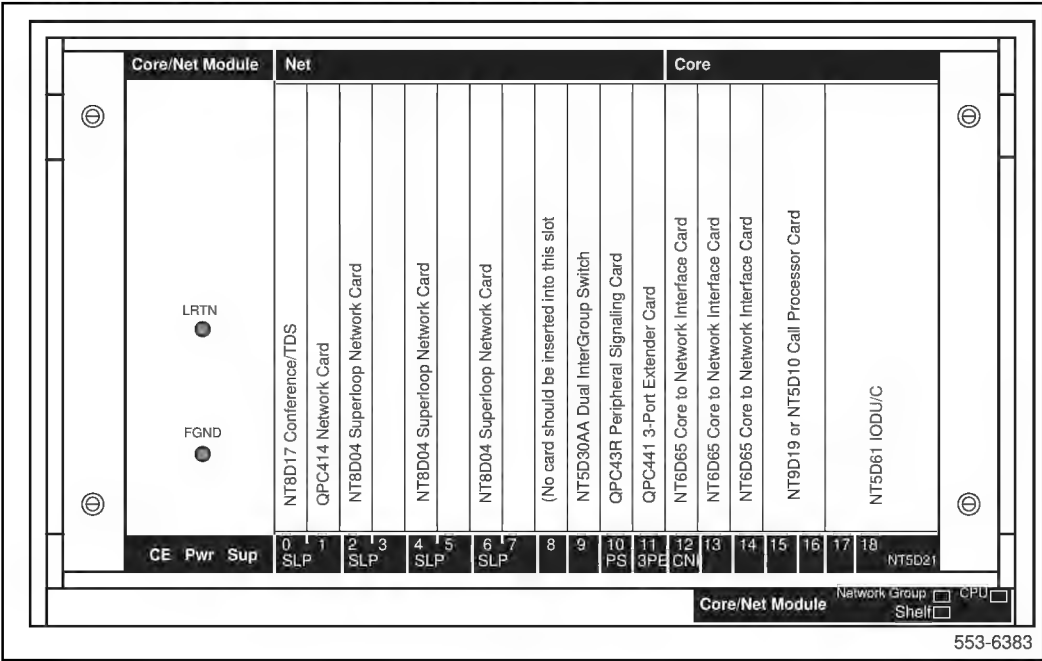
One section of this module houses the common control complex (CPU, memory, up to three CNI cards, and mass storage functions). The other section supports a Conference card, a Dual InterGroup Switch card, one Peripheral Signaling card, one 3-Port Extender card, and optional network cards.

Note: Three CNI card are used only for option 81C. For options 51C and 61C, CNI card slots 13 and 14 remain empty.

Each Core/Network module houses up to four NT8D04 Superloop Network Cards, or seven QPC414 Network Cards, or a combination of the two, for a total of 16 network loops. Superloop Network cards are cabled to the backplane of an IPE Module. QPC414 Network Cards are cabled to the dual loop peripheral buffer card in a PE Module. In a typical configuration, one conference/TDS card is configured in the module, leaving 14 voice/data loops available.

Figure 6 shows the cards housed in the NT5D21 Core/Network Module as configured for option 81C. For options 51C and 61C, slots 8, 13, and 14 are spare and slot 9 contains the Clock Controller card, if required.

Figure 6
 NT5D21 Core/Network Module equipped for option 81C



NT6D39 CPU/Network Module

This module provides the CPU control and network switching functions in options 51 and 61.

Option 51, a single-CPU, half-network group system, requires one CPU/Network Module. The module houses all of the equipment required for CPU control.

Option 61, a dual-CPU, full-network group system, requires two CPU/Network Modules (one sits on top of the other). The two modules provide redundant operation. If there is a failure in one of the modules, the function is transferred to the appropriate circuit cards in the other module without a loss of service.

Each CPU/Network module houses up to four NT8D04 Superloop Network Cards, or eight QPC414 Network Cards, or a combination of the two, for a total of 16 network loops. Superloop network cards are cabled to the backplane of an IPE Module. QPC414 Network Cards are cabled to the dual loop peripheral buffer card in a PE Module. In a typical configuration, one conference/TDS card is configured in the module, leaving 14 voice/data loops available.

[Figure 7](#) shows the cards housed in the module.



NT6D60 Core Module

This module provides common control and network interface functions in option 81.

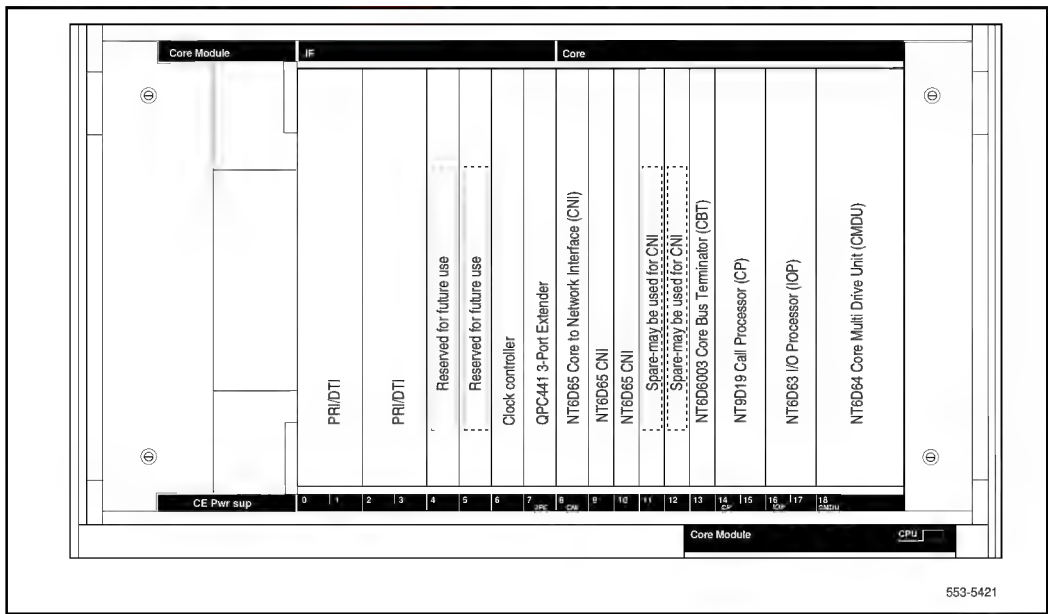
Two Core Modules, which sit side by side in the first or second tier, are required. The two modules provide redundant common control operation. If there is a failure in one of the modules, the function is transferred to the appropriate circuit cards in the other module without a loss of service.

One section of this module houses the common control complex (CPU, memory, and mass storage functions). The other section supports a clock controller card, one three-port extender card, and optional PRI/DTI cards.

Core-to-Network Interface (CNI) cards in the module are cabled to Network Modules to extend bus signals (address, data, and control) from the common control complex to the network.

[Figure 8](#) shows the cards housed in the module.

Figure 8
NT6D60 Core Module



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NT8D11 Common/Peripheral Equipment Module

This module provides CPU control, network switching, and peripheral equipment interface functions in options 21A, 21, and 21E. One CE/PE Module is used in each system.

The CE/PE Module provides 28 loops (4 loops per slot). The voice/data loops can be provided by the NT8D18 Network/DTR Card, NT8D04 Superloop Network Cards, and QPC414 Network Cards.

Note: The superloop network card is not used in option 21A.

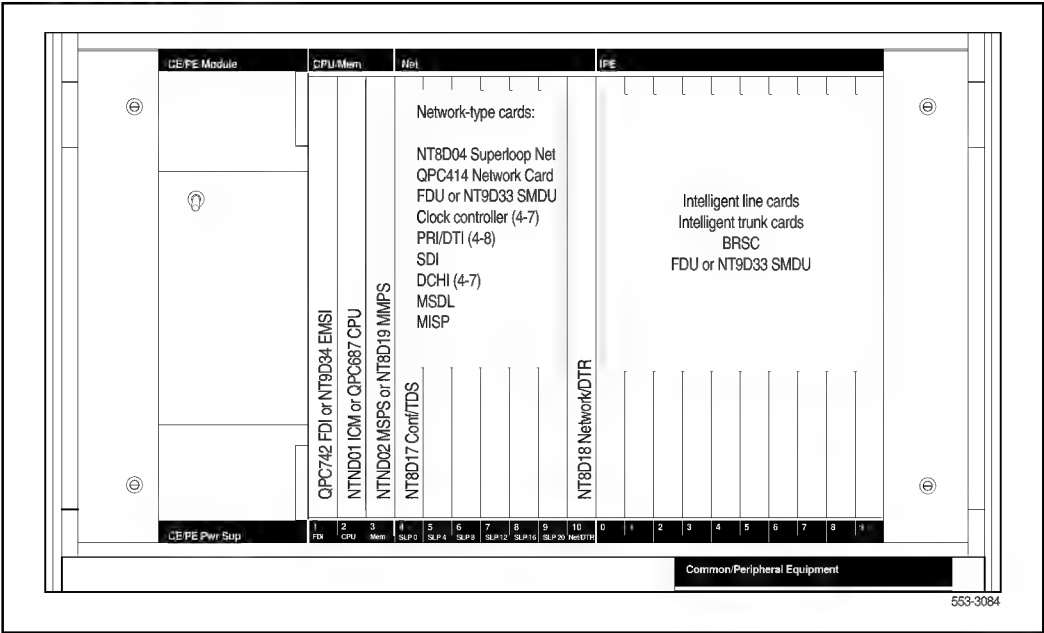
Through the backplane, the network/DTR card provides four loops to the IPE cards in the module. The module supports six additional network slots that provide four loops per slot through backplane connections. In a typical configuration, one conference/TDS card is configured in one of the slots. This leaves five slots for superloop network cards, regular network cards, or a combination of the two.

Five superloop network cards provide 20 voice/data loops; five regular network cards provide 10 voice/data loops. Superloop network cards are cabled to the backplane of an IPE Module. QPC414 Network Cards are cabled to the dual loop peripheral buffer card in a PE Module.

Note: The CE/PE Module supports intelligent peripheral equipment (IPE) cards. PE cards are housed in NT8D13 PE Modules.

Figure 9 shows the cards housed in the module (option 21A is also equipped with the NT7D15 System Monitor Card, which occupies one slot on the backplane).

Figure 9
NT8D11 CE/PE Module



NT8D13 Peripheral Equipment Module

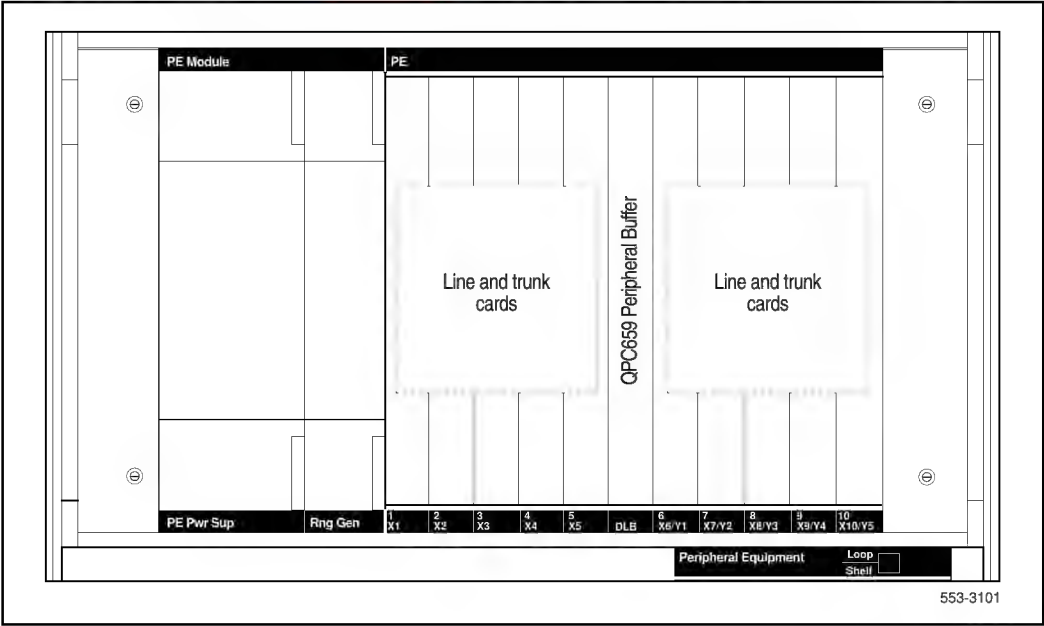
This module provides the interface between network switching and peripheral equipment cards, such as line and trunk cards, in all system options (option 21A must be upgraded for compatibility).

Note: This module does not support intelligent peripheral equipment (IPE) cards. IPE cards are housed in NT8D11 CE/PE and NT8D37 IPE Modules.

The PE Module houses one QPC659 Dual Loop Peripheral Buffer Card, which is the peripheral equipment controller, and up to ten PE cards. The dual loop buffer card is cabled to a QPC414 Network Card.

Figure 10 shows the card slot configuration in the module.

Figure 10
 NT8D13 PE Module



NT8D34 CPU Module

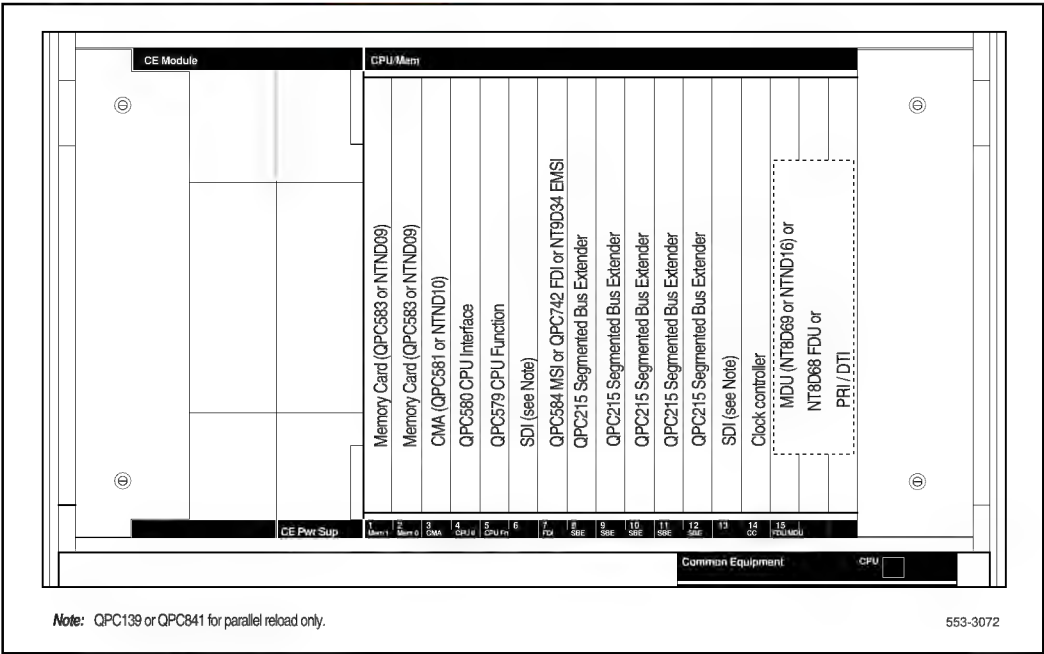
This module provides the CPU control in option 71.

Two CPU Modules, which sit side by side in the first or second tier, are required. The two modules provide redundant CPU operation. If there is a failure in one of the modules, the function is transferred to the appropriate circuit cards in the other module without a loss of service.

Segmented bus extender cards in the module are cabled to Network Modules to extend the CPU bus signals (address, data, and control) to the network.

Figure 11 shows the cards housed in the module.

Figure 11
NT8D34 CPU Module



NT8D35 Network Module

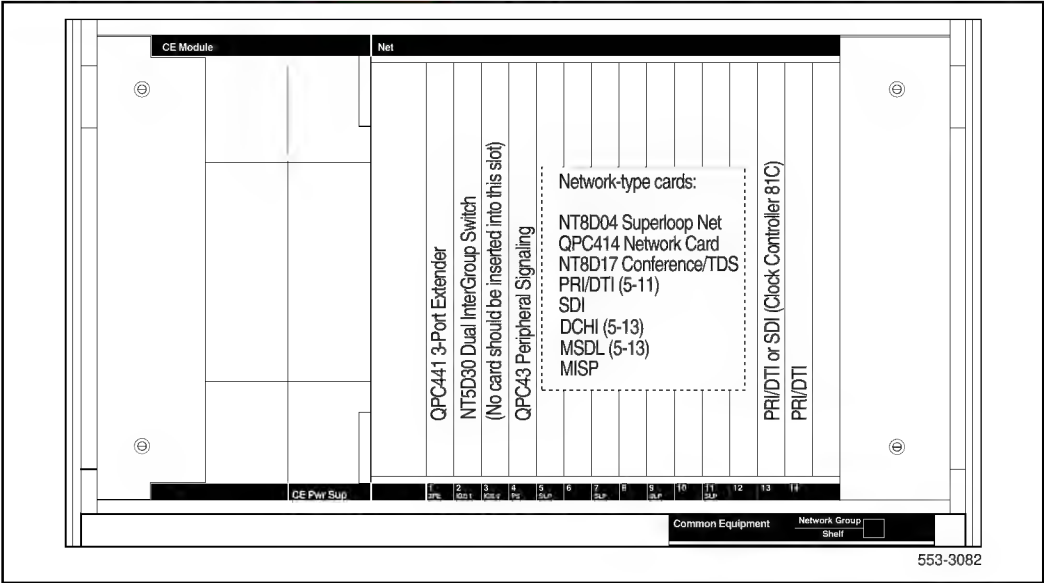
This module provides the network switching functions in options 71, 81, and 81C.

Two Network Modules are required to make a full network group of 32 loops. A maximum of ten Network Modules (five network groups) can be configured in options 71, 81, and 81C.

The Network Module houses up to four NT8D04 Superloop Network Cards, or eight QPC414 Network Cards, or a combination of the two, for a total of 16 network loops. Superloop network cards are cabled to the backplane of an IPE Module. QPC414 Network Cards are cabled to the dual loop peripheral buffer card in a PE Module. In a typical configuration, one Conference/TDS card is configured in the module, leaving 14 voice/data loops available. In option 81C, the Conference/TDS card is located in the Core/Network Module. For option 81C, the Clock Controller must be installed in slot 13.

Figure 12 shows the cards housed in the module.

Figure 12
NT8D35 Network Module

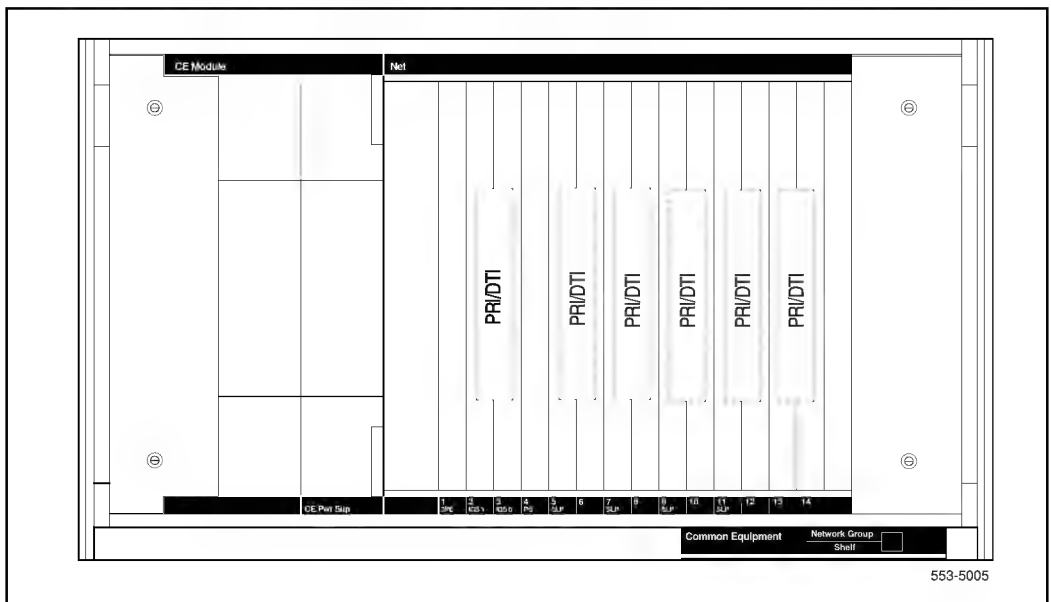


The Network Module can be used as a PRI/DTI expansion module. When it is used in this configuration, the Network Module can be used with any option (option 21A must be upgraded for compatibility). The number of PRI/DTI expansion modules that can be used is determined by traffic considerations.

Figure 13 shows the card slot configuration when the Network Module is used for PRI/DTI expansion.

Note: The bus terminating units (BTUs) that are equipped in the NT8D35AA and NT8D35DC Network Module configuration are not required for, and will interfere with, the PRI/DTI expansion configuration. The NT8D35BA and NT8D35EA Network Modules do not use nor do they need BTUs for any application.

Figure 13
NT8D35 Network Module configured for PRI/DTI expansion

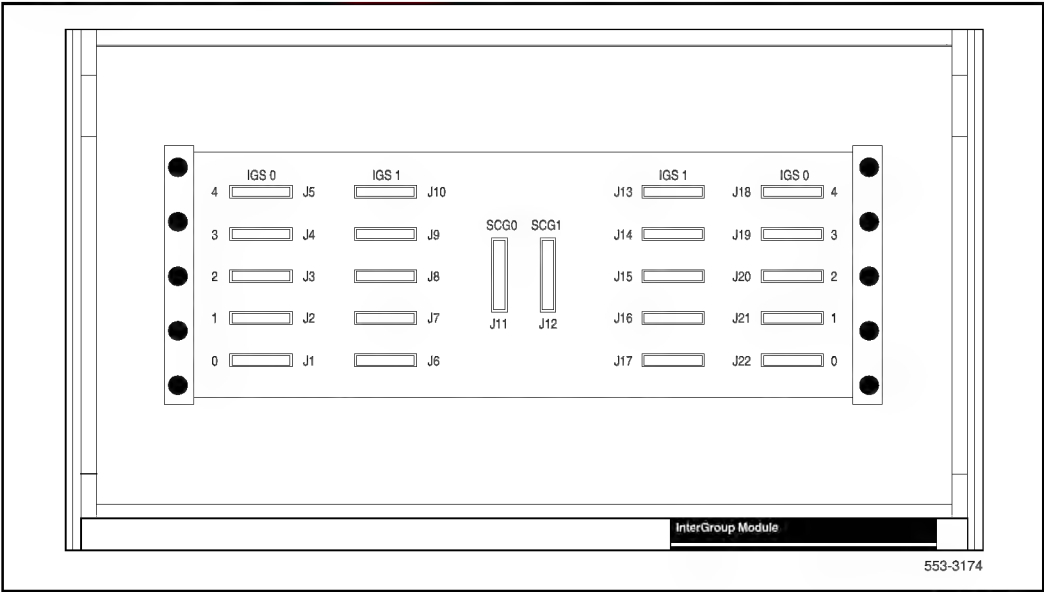


NT8D36 InterGroup Module

This module, used in options 71, 81, and 81C, houses the QPC417 Junctor Board. The Clock Controller and Dual InterGroup Switch cards are interconnected through the junctor board, which provides a path for switching traffic between network groups.

Figure 14 shows the connector labels in the module.

Figure 14
 NT8D36 InterGroup Module



NT8D37 Intelligent Peripheral Equipment Module

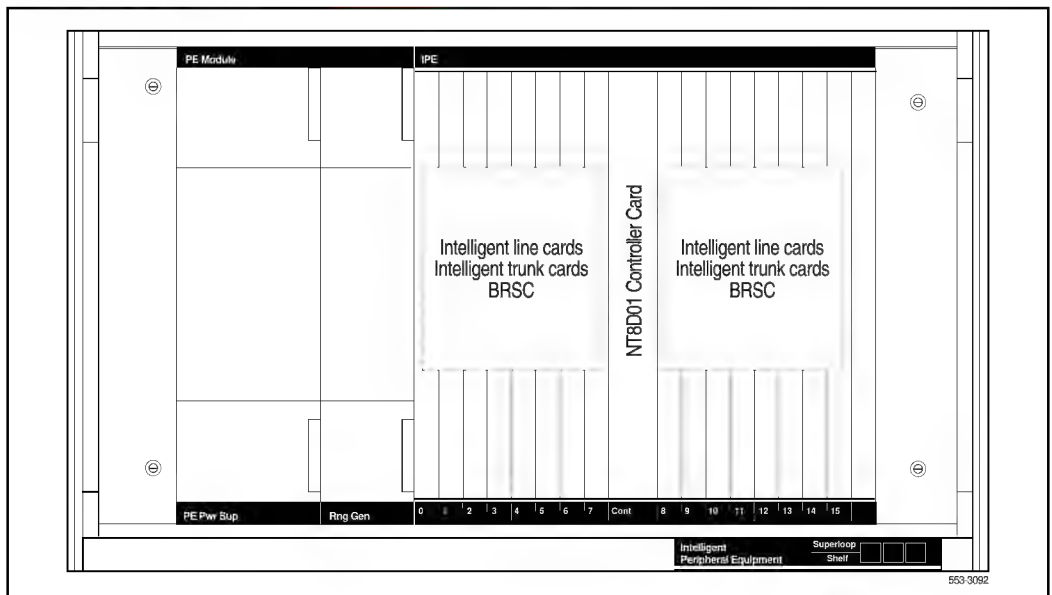
This module provides the interface between network switching and intelligent peripheral equipment cards, such as intelligent line and trunk cards, in all options (option 21A must be upgraded for compatibility).

Note: This module supports intelligent peripheral equipment (IPE) cards. Non-intelligent peripheral (PE) cards are housed in the NT8D13 PE Module.

The IPE Module houses one NT8D01 Controller Card, which is the peripheral equipment controller, and up to 16 IPE cards, supporting up to 512 terminal numbers (256 voice and 256 data). The controller card is cabled to the NT8D04 Superloop Network Card.

Figure 15 shows the card slot assignments in the module.

Figure 15
NT8D37 IPE Module



NT8D47 Remote Peripheral Equipment Module

In conjunction with the NT8D13 PE Module, the RPE Module extends the network-to-peripheral equipment interconnection distance between local and remote sites. This module can be used with all options (option 21A must be upgraded for compatibility).

The RPE Module accommodates two network loops. The number of RPE Modules required per system depends on the number of connections required at the remote site.

At the local site, the RPE Module is equipped with QPC63 Local Carrier Buffer Cards. Although they are not related to RPE function, the RPE Module may also house PRI/DTI cards at the local site. At the remote site, the RPE Module is equipped with QPC65 Remote Peripheral Switch Cards.

Figure 16 shows the cards housed in an RPE Module at the local site. Figure 17 shows the cards housed in the module at the remote site.

Figure 16
 NT8D47 RPE Module—local site

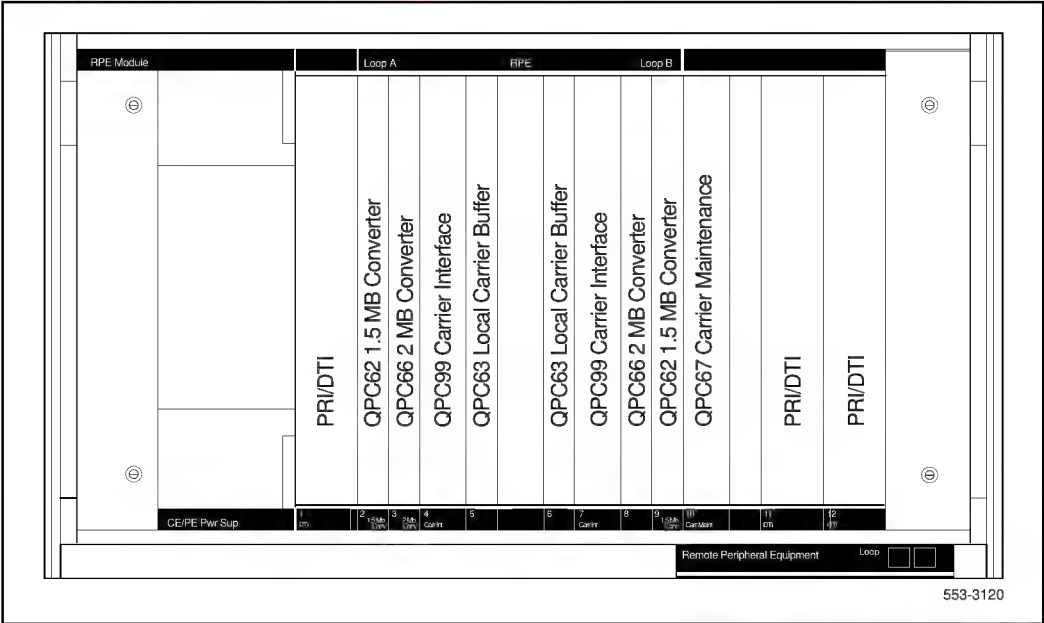
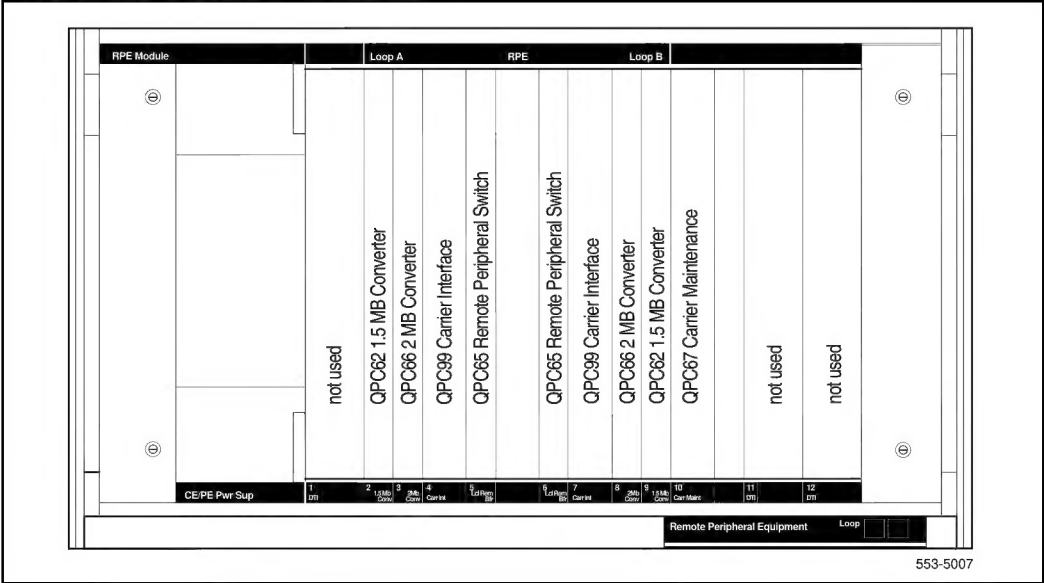


Figure 17
NT8D47 RPE Module—remote site



NT9D11 Core/Network Module

This module provides common control and network interface functions in options 51C and 61C starting with X11 release 19.

Two Core/Network Modules are required in the option 61C switch and one module is required in the option 51C. The two modules in options 61C provide redundant common control operation. If there is a failure in one of the modules, the function is transferred to the appropriate circuit cards in the other module without a loss of service.

One section of this module houses the common control complex (CPU, memory, and mass storage functions). The other section supports a conference card, two InterGroup Signaling cards, one Peripheral Signaling card, one 3-Port Extender card, and optional network cards.

Each Core/Network module houses up to four NT8D04 Superloop Network Cards, or seven QPC414 Network Cards, or a combination of the two, for a total of 16 network loops. Superloop Network cards are cabled to the backplane of an IPE Module. QPC414 Network Cards are cabled to the Dual Loop Peripheral Buffer card in a PE Module. In a typical configuration, one Conference/TDS card is configured in the module, leaving 14 voice/data loops available.

Figure 18 shows the cards housed in the module.

Figure 18
NT9D11 Core/Network Module

